

REMARKS

This Amendment cancels claim 13 and amends claims 1, 20, and 24 in accordance with the original disclosure. Support for the amendments to claim 1 is found, for example, in canceled claim 13 and original claim 24. Claims 1-12 and 14-24 remain in this application.

Allowed Claims

As set forth in paragraph 5 of the Office Action, claims 8 and 14-18 have been allowed.

Rejections under 35 U.S.C. § 103(a)

A. Claims 1-7, 11, 12, 13, and 20

Claims 1-7, 11, and 12 stand rejected under 35 U.S.C. § 103(a) for obviousness over the teachings of U.S. Patent No. 4,776,415 to Brice in view of the teachings of U.S. Patent No. 5,964,473 to Degonda et al. Claims 13 and 20 stand rejected under 35 U.S.C. § 103(a) for obviousness over the teachings of Brice and Degonda in view of the teachings of U.S. Patent No. 4,629,950 to Ching. As set forth above, Applicant has canceled claim 13 and has added the limitations thereto into independent claim 1. Therefore, Applicant will first discuss the patentability of amended claim 1 and dependent claims 2-7, 11, 12, and 20 over the Brice, Degonda, and Ching combination.

Claim 1, as amended, is directed to a fork lift truck drive device comprising a traction drive system having (a) a drive axle and (b) a hydraulic work system having at least one electric motor and at least one pump driven by the electric motor. The drive axle has an axle housing that is substantially closed on all sides and is provided for connection with a vehicle frame. The electric motor and/or the pump of the hydraulic work system is located inside the axle housing.

As discussed in the pending application, the claimed fork lift truck drive device has significant advantages over previously known fork lift truck drive devices. For example, relocation of the electric motor and/or the pump of the hydraulic work system into the drive axle of the traction drive system increases the space available for other components, such as increasing the size and volume of the battery. Additionally, the component(s) located

inside the axle housing no longer requires its own individual housing and, thus, reduces the time and effort involved in manufacturing and assembly.

Brice, as particularly shown in Fig. 2, discloses a baby walker having a pair of spaced hydraulic cylinders 34, 36 with wheel bearings 52, 54 and wheels 62, 68 at their free ends. A tie bar 56 extends between the wheel bearings 52 and 54 and supports two motors 44 and 46 and a hydraulic pump 42. The motors 44, 46 turn the wheels 62, 68 by axles 60 and 66. As discussed in Brice at column 3, line 55 to column 4, line 15, either motor 44 or 46 or both together can operate the hydraulic pump 42 to operate the hydraulic cylinders 34 and 36 to raise and lower the wheels 62, 68.

Degonda discloses a wheelchair which, as described in column 13, lines 19-48, has a chassis 150 consisting of two rigid portions 151 and 152. The chassis 150 has two main wheels 156 with electric motors 155 and a main axle 157.

Ching discloses a movable baby cart 1 having a case 2 installed on a rear cross bar 11. The case 2 includes a drive control device having a dc power source E, a drive motor DM, a timer T, and a speed reducer DS. The drive control device further includes switches to control the dc power to the motor DM, the timer T, or a music source IC or lamp device AD.

With respect to the limitations of claim 13 (now incorporated into independent claim 1), the Examiner combines the safety control of the Brice baby walker with the electric motors of the Degonda wheelchair and the case of the Ching baby cart to reject the claimed fork lift truck drive device. Applicant respectfully disagrees.

Firstly, none of the cited references is directed to a working machine, such as a fork lift truck, as in amended claim 1. Applicant does not believe one of ordinary skill in the fork lift truck art would look to wheelchairs and baby walkers to modify a fork lift truck. However, even if the Examiner's combination were made, it would not arrive at the claimed invention. As set forth in amended claim 1, the fork lift truck drive device of the invention has (1) a traction drive system having a drive axle and (2) a hydraulic work system having at least one electric motor and at least one pump driven by the electric motor. In Brice, the hydraulic cylinders 34, 36 of the baby walker are not part of the hydraulic work system as claimed in the present invention. Their only function appears to be to engage and disengage the drive wheels 62 and 68 of the Brice baby walker with the ground. Therefore, these hydraulic cylinders 34, 36 are in principle part of the traction drive system of the baby walker not the hydraulic work system, as claimed in claim 1. Additionally, neither Degonda nor

Ching even have an element remotely similar to the hydraulic work system claimed in claim 1. Therefore, none of these references, either alone or in combination, fairly teaches or suggests the claimed hydraulic work system of claim 1.

Further, and more specifically, claim 1 includes the limitation that the axle housing is substantially closed on all sides and the electric motor and/or pump of the hydraulic work system is located inside the axle housing. Neither Brice nor Degonda have an axle housing. However, the Examiner relies upon Ching for this teaching. Applicant respectfully disagrees. The component relied upon by the Examiner as an "axle housing" in Ching is nothing more than a case for the Ching baby walker control device. Additionally, this case, even if it were broadly construed to be equivalent to an axle housing, is not substantially closed on all sides as required in amended claim 1 since large portions of the Ching axle extend beyond the case. Therefore, for all of the above reasons, claim 1 is believed allowable over the Brice, Degonda, and Ching combination. Reconsideration of the rejection of claim 1 is respectfully requested.

Claims 2-7, 11, 12, and 20 depend either directly or indirectly from claim 1 and are believed allowable over the cited art for substantially the same reasons as discussed above with respect to claim 1. Additionally, none of the cited references, either alone or in combination, fairly teaches or suggests the claimed fork lift truck drive system in which the drive system has two hydraulic traction motors having secondary regulation systems (claim 6) or the claimed fork lift truck drive device in which the drive axle has a single traction motor (claim 11). Therefore, for all of the above reasons, claims 2-7, 11, 12, and 20 are believed allowable over the cited prior art and in condition for allowance. Reconsideration of these rejections is respectfully requested.

B. Claims 1, 2, 6, 7, 9, 10, 19, and 20-24

Claims 1, 2, 6, 7, 9, 10, 19, and 20-24 stand rejected under 35 U.S.C. § 103(a) for obviousness over the teachings of U.S. Patent No. 3,780,820 to Schwab et al. in view of the teachings of U.S. Patent No. 4,763,751 to Gardner, Jr. In view of the above amendments and the following remarks, reconsideration of these rejections is respectfully requested.

Schwab is directed to a fork lift truck 10 having front drive wheels 12 powered by an internal combustion engine 14. The truck also includes normally undriven rear steering wheels 23, 23a connected to a steering axle 24 driven by wheel motors 28, 28a that boost the

drive or traction of the device when the vehicle needs more traction than the main drive wheels 12 are capable of providing. The wheel motors 28, 28a are supplied with hydraulic fluid by a hydraulic pump 30,

Gardner, Jr. discloses an electrohydraulic motor transmission drive system having a standard axle housing 115 and axles 34. A separate housing 81 is mounted to the rear housing 115 and includes a jackshaft 17A, a gear jackshaft 17B, hydraulic cylinders 1A and 1B, and a worm screw gear 9A and 9B. As set forth at column 8, lines 23-26, an electric motor 38, hydraulic pump 8, and storage reservoir 31 could also be mounted to the axle housing 115. The electric motor 38 and hydraulic pump 8, however, are part of the traction drive system to propel the vehicle.

Neither Schwab nor Gardner was cited against claim 13 (which has been added to claim 1) and, therefore, these references are not believed to impact upon the allowability of amended claim 1. Further, neither Schwab nor Gardner, either alone or in combination, teaches or suggests the fork lift truck drive device of claim 1 having (a) a traction drive system with a drive axle, and (b) a hydraulic work system having at least one electric motor and at least one pump driven by the electric motor in which the electric motor and/or the pump of the hydraulic work system is located inside a substantially closed axle housing. Therefore, for all of the above reasons, claim 1 is believed patentable over the Schwab and Gardner combination. Reconsideration of the rejections of claim 1 is respectfully requested.

Claims 2, 6, 7, 9, 10, 19, and 20-24 depend from, and add further limitations to, claim 1. Since these claims depend from a claim believed to be in condition for allowance, these claims are also believed to be in condition for allowance.

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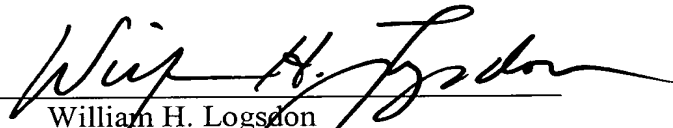
Conclusion

In view of the above amendments and remarks, claims 1-7, 9-12, and 19-24, as amended, are believed patentable over the cited prior art and in condition for allowance. Reconsideration of the rejections of claims 1-7, 9-12, and 19-24 and allowance of all of pending claims 1-12 and 14-24 are respectfully requested.

Respectfully submitted,

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By

A handwritten signature in black ink, appearing to read "William H. Logsdon", written over a horizontal line.

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